

Claims

What is claimed is:

1. (Currently amended) A low-temperature NPP spent fuel reactor, wherein the reactor core comprises:

fuel assemblies;

upper and lower core grid plates;

control ~~rod~~ rods and their drive mechanisms;

the fuel assemblies being fixed with upper and lower core grid plates and fuel assemblies;

each of the control rods is inserted from the top of the reactor core into a lattice made up of the upper and lower core grid plates and fuel assemblies;

the upper end of the control rod is connected with its drive mechanism;

the reactor core is located in a core vessel located under a core pool, said core pool is provided with coolant inlet and outlet nozzles, which are connected through pipes with a heat exchanger;

wherein NPP spent fuel that is directly used as nuclear fuel and wherein light water is used as coolant and moderator in the reactor.

2. (Currently amended) The low-temperature NPP spent fuel reactor according to claim 1, wherein on the top of the core pool there is provided at least one of: a sealing cover and an airtight gas shield.

3. (Currently amended) The low-temperature NPP spent fuel reactor according to claim 1, wherein a pressurizer or a large pool is connected with the coolant inlet nozzle to improve static pressure and maintain pressure at the core outlet.
4. (Currently amended) The low-temperature NPP spent fuel reactor according to claim 1, wherein within the core pool there is an underwater handling canal, which is connected with a spent fuel storage pond and which replaces an additional schema of reloading_water layer.
5. (Currently amended) The low-temperature NPP spent fuel reactor according to claim 1, wherein a residual heat cooler is provided in the spent fuel storage pond and an electromagnetic valve is arranged on the connection tube to form a passive residual heat removal system.